Appendix K
How to Submit Metadata and Data Files to the USACE
Geospatial Data Clearinghouse Node

K-1. Introduction

Note: Updates to this topic will be available at http://corpsgeo1.usace.army.mil/howto/.

   a.   About this appendix. Throughout this appendix, the U.S. Army Corps of Engineers (USACE) Geospatial Data Clearinghouse Node server is referred to as the Geospatial Server or the Server.

The Webmaster of the Geospatial Server is mentioned throughout this appendix. The Webmaster is available at http://webmaster@corpsgeo1.usace.army.mil.

The purpose of this appendix is to describe for USACE employees:

- How to sign up to access the Geospatial Server.

- File format and filename requirements for submitting files to the Geospatial Server.

- How to submit, delete, or replace geospatial metadata and data files on the Server.

- How to access and view metadata that is on the Server.

- How to edit your organization's *collection metadata* files, which HQUSACE puts on the Server.

   b.   About geospatial metadata. Geospatial metadata is information about geospatial data (any data that has geographic coordinates). U.S. Federal Executive Order No. 12906 requires that all Federal agencies create a metadata file for any geospatial dataset or series of datasets created. It also requires that these metadata files be made accessible to the public and that they be made in the accepted standard format. The standard format is designed to contain all needed information for various types of data. The rigidity of the standardized structure allows the files to be read and indexed by computers. The Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata is the first standard created in the United States (1995). The International Standards Organization (ISO) developed the ISO Metadata Standard 19115.3 in 2001. The FGDC is working with the ISO to develop one worldwide standard. As of August 2002, most metadata creation tools in the United States still output metadata in Content Standard format. For more information on metadata, metadata creation tools, or the Content Standard, see http://www.fgdc.gov/ metadata/metadata.html or http://corpsgeo1.usace.army.mil and follow the link to "Download Metadata Software."

   c.   About the National Spatial Data Infrastructure (NSDI) Clearinghouse. The NSDI is a system of websites developed by a cooperative group of U.S. Federal, State, and local government and private agencies. It is designed to allow access to geospatial data from many sites via one central website. Agencies participating in this Clearinghouse create geospatial metadata repositories on their local computers or Clearinghouse Nodes, using formats that conform to Clearinghouse standards. The Clearinghouse central server can then index these metadata files at their remote metadata repositories. Anyone with Internet access can search the indexed metadata files based on variables such as geographic location, time period, and keywords. When a relevant metadata file is found, it will contain specifications about the data such as data

quality, points of contact, and where the data can be located. The number of U.S. and International participants in the Clearinghouse has grown to 267 (2002).

d. *About the USACE Geospatial Data Clearinghouse Node.* USACE participates in the National Spatial Data Infrastructure (NSDI) Clearinghouse. USACE has a Web server on which is stored geospatial metadata about data belonging to USACE agencies. This service is called the USACE Geospatial Data Clearinghouse Node. Data can also be stored there, if desired. The Uniform Resources Locator (URL) of this server is http://corpsgeo1.usace.army.mil. The metadata files stored here are indexed by the NSDI Clearinghouse.

e. *About the Geospatial Data and Systems Point of Contact (GD&S POC).* Every USACE agency should have a designated GD&S POC. The responsibilities of the GD&S POC are defined in USACE Engineering Regulation 1110-1-8156. To find out who the GD&S POC is for your organization, go to the GD&S POC Database at http://corpsgeo1.usace.army.mil/poc.html and type in your agency designation. The GD&S POC should be involved in the organization of the metadata creation and submission process as well as overall geographic data management in an agency. Before submitting metadata to the USACE Server, it may be beneficial to find out from the GD&S POC or another knowledgeable person if there is a plan within your agency for file naming conventions, record-keeping of submitted files, or other types of data management.

K-2. Getting Access to the Geospatial Data Server

Access is the same for submitting either metadata or data files. To register for either, three steps are required.

a. *Have a UPASS User ID and UNIX password.* All USACE employees are qualified to have a UPASS user ID and a UNIX password. For information on how to obtain these, contact your local computer support group.

b. *Sign up to get access to the Geospatial Server.* Ask your computer support group's UPASS Administrator to request access within the UPASS system to the Geospatial and Worldwide-Web (WWW) Server. Once the request is submitted to the UPASS Administrator for the Geospatial and WWW Server, access will be granted to the Server. Access is usually granted within 48 hours.

c. *Send your contact information to the Server Webmaster.* For the submission system to work, you must submit your name, email address, and USACE organization to the Corpsgeo1 Webmaster: webmaster@corpsgeo1.usace.army.mil.

K-3. Metadata and Data Requirements

a. *File format requirements.* Metadata file format has three requirements:

- Conformance to the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (until the metadata-processing program on the Server recognizes the ISO Standard).

- Each line in the metadata file must be indented according to the rules required by mp, a metadata parser software program.

- The file format must be plain ASCII text file format. The file should not be in HTML or SGML format when it is submitted.

The output of the free USACE metadata creation software tool, CORPSMET (see below), or any metadata creation software that conforms to the Content Standard will conform to these requirements.

No requirements for data formats are on the Server. The Server accepts only geographic data (i.e., data with geographic coordinates). Data producers are responsible for the quality of their geospatial metadata.

  b. Metadata creation tools. The metadata generator software package, CORPSMET, developed by a contractor for USACE, creates metadata in the correct format. It outputs the metadata file in the correct hierarchically indented format. It runs on Windows and NT operating systems. It is free and menu driven. It can be downloaded by going to the Server homepage at http://corpsgeo1.usace.army.mil and following the link to "Download Metadata Software." "Download CORPSMET" is an option on this page. Sample metadata files and a metadata training manual are also available from this page. After downloading, the file must be unzipped before being installed. For more information on unzipping or for help installing CORPSMET, ask your computer support group.

Other metadata creation software packages are also available. Before using them, check to be sure they are outputting the metadata in the correct standard format. Some Geographic Information System softwares, such as ArcInfo, offer an option for users to create metadata as they create a dataset.

  c. Filename conventions. When metadata files are put on the Server, a program runs that uses the filename extension of each file to determine how to process the file. The following naming conventions are required:

Type of File	Required Filename Extension
Original metadata	.met
File to replace current files on the Server	.rep
File to be deleted	.del
Data file	No required extension

To ftp (file transfer protocol) a file to the Server, the name can be up to 100 characters. All filenames should consist of a continuous string of characters which may include numbers, letters, underscore (_), hyphen (-), and dot (.). Other special characters should be avoided. Spaces in filenames are not allowed. Filenames are case sensitive.

The GD&S POCs and persons submitting metadata are responsible for keeping track of their organizations' metadata filenames. The filename will be needed if the metadata has to be replaced, updated, or deleted in the future. The filenames currently in a Command's metadata directory can be seen by using anonymous ftp to view the Command's metadata directory. (See section J-8 for how to view the metadata files.)

K-4. Submitting Geospatial Metadata Files to the USACE Geospatial Data Clearinghouse Node

To put a metadata file on the Geospatial Data Server after it has been registered to access the Server, follow these steps:

* Plan the filename. Remember to use the .met extension for metadata file submissions. Any number of files can be submitted during one ftp session, including metadata and data files.

- Use the ftp software on your computer. Because many brands exist of ftp software, it would be impossible to describe them all. For information on how to use the ftp utility on your computer, contact your computer support group.

- Use the following parameters to initiate ftp to your home directory:

  Host: geodata.usace.army.mil
  Login ID: *yourUPASSid*
  Password: *yourUPASSUNIXpassword*

  Note that geodata is a different server name than the one the public uses to view the files. This Server is used only to post, maintain, and index metadata and data files. When you have successfully logged on, you will be in your home directory. This is the only place on the Server where you can put files. Use your ftp software to put the files on the Server in your directory.

- Once the metadata is on the Server, close the session and exit from the ftp software.

- The software that moves the files to the correct directory on the Geospatial Server processes new files about every 2 hours. Therefore, do not check the directory immediately after submission. Once a metadata or data submission, replacement, or deletion is successfully processed, an email message will confirm this within a few hours. If the file is not successfully processed, a return email message explaining why will arrive within a few hours.

K-5. Submitting Geospatial Data Files to the USACE Geospatial Data Clearinghouse Node

a. Data quality. The producers of geospatial data are responsible for the quality, integrity, and maintenance of the data that they produce.

b. Data file formats. Geospatial data in any format is accepted on the Server. This includes output generated by any Computer-Aided Design and Drafting (CADD) system or Geographic Information Systems (GIS). Geospatial data includes any data with geospatial coordinates. Please be aware of the filename conventions for placing data on the Server as described above in section J-3c Filename conventions.

c. Data and the referring metadata file. When a data file is submitted to the Server, a metadata file that refers to that data file must also be submitted to the Server at the same time. (However, a metadata file may be submitted without a data file.)

Section 6 of a metadata file is the "Distribution Information" section. It contains information about the distribution of and options for obtaining the data to which the metadata refers. It should also contain information about one or more datasets to which the metadata refers. Which of the optional data descriptors in this section to use depends on where the data is located. A part of this section (6.4.1) is for "Non-Digital Data," and a part (6.4.2) is for "Digital Data."

To submit a data file and the referring metadata file to the Server, the metadata file must be referenced as follows: http://corpsgeo1.usace.army.mil/filename.ext. Note that the name of the data file to which your metadata refers must be in the place of the filename.ext. This reference has to be in Section 6 "Distribution Information" of the metadata file in the location for "Network Resource Name." The script that processes the files takes this text and turns it into a link to the actual data file. (The text http://corpsgeo1.usace.army.mil is just dummy text to alert the processing script as to what it needs to do.) This metadata on the Server will

enable requests for downloading of the corresponding data immediately, if the data is on the corpsgeo1 Server.

If data is submitted with metadata, the Section 6 "Distribution Information" must contain options that are set up like this (notice the hierarchical indentation of the options):

6: Distribution Information:
 Standard Order Process:
  Digital Form:
   Digital Transfer Option:
    Online Option:
     Computer Contact Info:
      Network Address:
       Network Resource Name: http://corps_geo1.usace.army.mil/filename.ext

Note that the filename.ext area is to be replaced with the data filename to which the metadata file refers.

The data and referring metadata files must be submitted at the same time for correct processing.

If a data file arrives at the Server without a metadata file, the data file will be put in storage for 2 weeks, and the sender will be notified to submit a metadata. If the metadata file is submitted within 2 weeks, a resubmission of the data file will not be necessary; Metadata Parser (MP) will take the data file from the temporary storage directory and process it normally.

To submit a data file that corresponds to a metadata file already on the Server, the old metadata file must be deleted from the Server and resubmitted with the data file. This will enable you to include the required text in the "Network Resource Name" section of the metadata file and allow MP to process the two files correctly.

One metadata file may refer to multiple data files. If this is the situation, Section 6 of the metadata file, "Distribution Information," will have more than one "Network Resource Name." For example:

Distribution Information
 Standard Order Process
  Digital Form
  Digital Transfer Option
   Online Option
    Computer Contact Info
     Network Address
      Network Resource Name http://corps_geo1.usace.army.mil/fname1.ext
      Network Resource Name http://corps_geo1.usace.army.mil/fname2.ext
      Network Resource Name http://corps_geo1.usace.army.mil/fname3.ext

Note that the fname1.ext, fname2.ext, and fname3.ext are the areas for the filenames of the data files that correspond to the metadata file.

To summarize:

- A metadata file can be submitted without a data file.

- If a data file is submitted, it must be simultaneously submitted with a referring metadata file.

- One metadata file can refer to multiple data files.

- Multiple metadata files can refer to one data file.

d.   Submitting the data file. When submitting a data file, use the process described in section J-4 to ftp the file to the Server. At the same time the data file is submitted, also submit the corresponding metadata file.

K-6. Replacing a Metadata File on the Server

To replace or delete a metadata file on the Server requires first knowing the exact filename of the file to be replaced or deleted. To find the filename, use an anonymous ftp or use the Worldwide Web and go to the URL ftp://corpsgeo1.usace.army.mil/ to locate the organization's metadata directory with the filename (see section J-8).

To replace or delete files originally placed on the Server by someone else, contact the Webmaster and provide proof that you are now responsible for these files. The filename of the replacement file should be in the format:

filename(.met).rep.

Note that the filename.met is the filename of the file to be replaced. The original filename will end with .met, so the replacement filename must end with .met.rep. The extension .rep will cause the Server to replace the metadata file currently in your Command's metadata directory having the name filename.met with the file you just put in your home directory.

When submitting a replacement file, use the same process described in section J-4 to ftp the file to the Server.

K-7. Deleting a Metadata File on the Server

First create a dummy file on your local computer with the same filename as the name of the file you want to delete plus the extension .del. It does not matter what is in the dummy file. The filename should be in the format:

filename(.met).del.

Note that the filename(.met) is the filename of the file to be deleted. The filename of the existing metadata file will end with .met, so the dummy file's filename will end with .met.del. The extension .del will cause the Server to delete the metadata file you have named.

When you are ready to submit the replacement file, use the same process described in section J-4 to ftp the file to the Server.

K-8. How to View Metadata on the USACE Geospatial
   Data Clearinghouse Node

Notice to data users: The data in the data files that are described in the metadata files produced by USACE are the results of collection and processing for specific USACE activities. These data are valid only for their intended use, content, time, and accuracy specifications. The user is responsible for the results of any application of the data for other than the intended purposes.

a. Using the Web to view metadata files. Go to the URL http://corpsgeo1.usace.army.mil. Click on the button "Locate Metadata." Choose whether you want to view metadata on the USACE Server or on the National Clearinghouse. If you want to view USACE metadata, you can choose to go to a map to select an organizational element or to a textual list of the organizations. Select the appropriate button. Select the organization whose metadata you want to view. Click on the link "Detailed Metadata" and then the folder called "metadata." Click on a file that has the filename extension *.html* or *.met*.

b. Using ftp to view metadata files. Use your Web browser to ftp to ftp://corpsgeo1.usace.army.mil/. Keep clicking on the organization whose metadata you want to view as you burrow down into the ftp site until you can choose the "metadata" folder. Once in the metadata folder, click on a file with the filename *.html* or *.met*.

K-9. Editing Collection Metadata on the Server

a. Collection metadata. The USACE geospatial data and metadata available on the Web include *collection metadata* and *detailed metadata*. A collection metadata file is a single metadata file that describes a number of related data files that are routinely collected by an agency. For example, the data may be hydrographic files that have been collected for 20 years. A detailed metadata file describes a unique data file or a collection of data files that are not routinely collected by an agency.

HQUSACE has created a series of collection metadata templates for all USACE Commands to edit or delete, as appropriate. Links to these templates are found under each Command's data pages. The changes to these pages can be made on a paper copy or electronic copy of the file and then sent to the Webmaster of Corpsgeo1 to be published. You can make the changes to the electronic file as described below, then send the resulting file to the Webmaster as an email attachment.

b. Electronic editing of a collection metadata file. While browsers differ, general instructions for saving an electronic copy of a web page to your local computer are given here. To download the web page to your PC, use your browser to view the collection metadata file web page. Save the file to your PC by using the browser menu options: File/Save as. Choose to save in the format of either HTML or text. Note where in your directory structure the file is being saved and its filename. Press enter.

Once a file is saved, the collection metadata file will have all the HTML tags necessary for viewing it from your Web browser on your local PC. To view the file on your browser while you edit it, use the browser menu options File/Open File in Browser or File/Open/Browse to locate and open the electronic copy of the metadata file you just downloaded.

You can then open the file in your word processor *as a text-only file* or in any text-only editor to make needed changes in the file and view the results from your browser. Please remember to open and save file in "Text Only" format in your word processing software. Any images in these files will not appear as you edit and view them on your local computer. This is normal. When the file is placed back on the Server, the images will appear as they should.

If you are using Microsoft (MS) Word and it will not allow you to open the file in text-only format, you have two options:

- Change the filename extension to .txt while opening the file to edit it. Then save it with the .htm filename extension to view it on your browser.

- Select the MS Word menu options, Tool/Options/General, and check the option "Confirm Conversion at Open." When you open the file, you can then choose to open it as a text file.

  c. Editing a paper copy of a collection metadata file. Print a hardcopy of the page from your Web browser while you are viewing it. Edit it and fax the edited version to the corpsgeo1 Webmaster at 603-646-4658. Please make your edits clearly. Please contact the Webmaster at webmaster@corpsgeo1.usace.army.mil to let him know the fax is coming.

K-10. Frequently Asked Questions

- What if the data set I have been working on has security restrictions?

  No geospatial data or metadata file that has any secure information should be posted on a public website, including the USACE Geospatial Data Clearinghouse Node. If you are creating a secure geospatial dataset, you should create a metadata file for that dataset and give it to the owner of the data along with the data files.

- Am I supposed to make a metadata file for every geospatial data file that I create?

  You should make a metadata file for every unique data file or dataset that you create. If you are making a related set of data files, then one metadata file may suffice.

- Must I also publish the geospatial data file when I publish its metadata file on the USACE Geospatial Data Clearinghouse Node?

  No. You may publish the geospatial data that is described in the metadata file that you are posting, but it is not required.

- May I publish a data file and not its corresponding metadata file on the USACE Geospatial Data Clearinghouse Node?

  No. Any data on the USACE Geospatial Data Clearinghouse Node must have a corresponding metadata file.

- How can I view USACE Geospatial Metadata?

  See section J-8.

- Who should I contact if the Server is not posting the metadata files or data files that I send?

  Corpsgeo1 Webmaster: webmaster@corpsgeo1.usace.army.mil.

- Who can I contact for more information about the USACE metadata submission?

  Contact help at one of the following four sites:

  Your organization's GD&S POC. Find out who is your POC at the GD&S POC Database web page at http://corpsgeo1.usace.army.mil/poc.html.

Corpsgeo1 Webmaster: webmaster@corpsgeo1.usace.army.mil.

HQUSACE Geospatial Data and Systems Manager – Nancy.J.Blyler@hq02.usace.army.mil.

You can also keep up with USACE GIS news and information by joining the USACE GD&S POC Email List. Find out how to sign up for the email list at http://gis.usace.army.mil/contacts.htm.

- Where can I find more information about USACE geospatial data and geospatial data systems?

More information is available at http://gis.usace.army.mil/.